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ABSTRACT

This paper describes the transfer of skills and knowledge from the classroom to outside the classroom. The action research focused on transfer, how to facilitate transfer, and why to concentrate on transfer, and it included a definition for the different levels and rates of transfer. Seventh and eighth grade students were not using existing computer technological equipment or skills outside the computer lab for homework or personal use. The problem was documented using a survey and pretests. Results indicated a high rate of availability of technological equipment, but inadequate knowledge and skills related to using technology. One probably cause could have been that small isolated rural communities lack technically skilled role models. Another cause could have been a lack of training for teachers and students. The solution involved unit lessons that actively engaged students in real life problem solving situations. Students practiced using existing computer software to learn how to create projects with a professional touch. The validity of documented discussions concerning transfer in students' reflection papers was strengthened by the significantly high levels of increase in test scores, typing skills, and technological aptitude by the end of the action research project. Three levels of transfer described the degree to which students planned to use the knowledge and skills acquired during the action research project. (Contains 27 references.) (Author/MES)

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TEACHING FOR TRANSFER

Ruth Drake

An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

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ABSTRACT

This paper describes the transfer of skills and knowledge from the classroom to outside the classroom. The action research focused on transfer, how to facilitate transfer, why to concentrate on transfer, and included a definition for the different levels and rates of transfer.

Seventh and eighth grade students were not using existing computer technological equipment or skills outside the computer lab for homework or personal use. The problem was documented using a survey and pretests. Results indicated a high rate of availability of technological equipment, but inadequate knowledge and skills related to using technology.

One probable cause could have been that small isolated rural communities lack technically skilled role models. Another cause could have been a lack of training for teachers and students.

The solution involved unit lessons that actively engaged students in real life problem solving situations. Students practiced using existing computer software to learn how to create projects with a professional touch.

The validity of documented discussions concerning transfer in students' reflection papers was strengthened by the significantly high levels of increase in test scores, typing skills, and technological aptitude by the end of the action research project. Three levels of transfer described the degree to which students planned to use the knowledge and skills acquired during the action research project.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

Statement of the Problem

The students of the targeted seventh and eighth grade classes exhibited low or non-existent computer technological skill usage in everyday school life. Student computer skills were not sufficient to complete homework using the available technology. Evidence for the existence of the problem included evaluation through use of pretests and a self-evaluation survey.

Immediate Problem Context

The targeted school was pre-kindergarten through eighth grade. The school was located in a two-story building, built in 1956, in a small, mobile, rural community of 1100. The school was part of a consolidated unit school district whose make-up was from 4 different small towns. The consolidation included one high school and a elementary school (kindergarten through fourth grade) in one town, an elementary school and middle school (kindergarten through eighth grades) in a second town, and an elementary school and middle school (pre-kindergarten through eighth grade) in a third town. The third school was the setting for the targeted problem. All information was taken from the 2000 school report card.

The total student enrollment of the pre-kindergarten through eighth grades was 345, of which 209 were middle school students. Fifty-two students were seventh graders and 50 were eighth graders. Within the middle school, 98.6% of the students were white, 1% was

black, and .5% was Asian/Pacific Islander. The average class size for the middle school was 23.5 students. Student attendance rate held at 96% while parental involvement was around 100% in an environment where the low-income rate was 28.7% and the mobility rate was 14.8%.

The middle school faculty had a population of 15 teachers, had an average teaching experience of 17.1 years, and was paid an average of $35,954 per year. All faculty members held bachelor degrees. Four faculty members held master degrees. Available to the staff were two special education aids, a school psychologist, a social worker, a speech pathologist, and a school nurse. Support staff consisted of a school secretary, a full time janitor, and a part time janitor. The student-teacher ratio was 16.7:1. The per capita expenditure for each child in the district was $5719 operational with $3422 being instructional.

The school program included math, social studies, science, reading, English, physical education, health, art, computer technology, humanities, Spanish, home economics, band, choir chimes and chorus. A multi-age self-contained class for at-risk sixth and seventh grade students was established for that year. Drug Awareness Resistance Education (DARE) was included in the fifth grade curriculum. An after school study hall was always available. Extra curricular options included sports, band, choir chimes, chorus, scholastic bowl, yearbook and student council.

Surrounding Community

The district covered 246.59 square miles in a rural setting that served students from parts of four counties and six communities. To meet parent concerns at the time of the 1992 consolidation, three elementary schools were established, two middle schools were

created and one high school was established. Because of the distribution, existing school buildings in three of the six communities were utilized. The population of the six communities was approximately 6,500 with additional residents living in rural areas. Most residents were employed in agribusiness or commuted to larger cities for employment. The median family income was $26,275.80; 4.16% of the populace qualified for public assistance. According to 1989 census data, 18.68% of 5 year olds, 11.65% of 6-11 year olds, and 8.84% of 12-17 year olds lived below the poverty level.

The district was very homogeneous in racial make up with 99.6% of the population being white. Educational attainment levels of people 25 years of age or older were as follows: 25.3% had no high school diploma; 44.9% were high school graduates; 14.51% had some college but no degree; and 16.1% had earned associate, bachelor or graduate/professional degrees.

An elected school board of seven members served the district. The administrative structure included the superintendent and four building principals. Special education services were provided by a count special education co-op. Community involvement with the school primarily centered on sports activities.

National Context of the Problem

In order for teachers to be able to teach transferable skills to students, the teacher must first be computer literate. Computer technology training for teachers and students alike was needed nationally for 95% of the nation's public schools by the end of the twentieth century according to Heaviside, Riggins, and Farris (1997). Wenglisky (1998) reported a need to use computers to apply higher-order skills learned in academic classes.

Wenglisky also stated that the primary focus of all technology initiatives should be on middle schools rather than elementary schools because the benefits were greater.

Student interest in technology was very high. Bennett (1999) reported children were in favor of computers wherever and whenever used in education. Bennett said, however, that adults would make the final decisions concerning computer usage. "Resistance to change is universal and often seems almost ingrained in the human psyche" (Bennett, 1999). The opposition apparent in Bennett's remark came from adults surveyed about implementing computers as tutors in the classroom. Teachers feared position loss, school administrators felt less paperwork might mean fewer administrators would be needed, and parents feared any radical change. However, Bennett went on to say many citizens would believe in the authorities involved directly in education, feeling that those authorities must know what is best. Bennett suggested implementing public relation activities to enhance attitude toward computer technology.

Trotter (1998) discussed the use of technology in the classroom for drill and practice. Children, Trotter believed, do learn basic skills from drill and practice in mathematics and language skills. According to Trotter, three steps needed for mastery of basic skills were: development of the skill initially, fluency at the skill, and application of the skill across different activities and content areas. However, Trotter went on to say drill and practice does not teach children to think.

Maurer and Davidson (1998) outlined the following specific changes believed to be possible with increased use of technology:

1. A continuous move toward greater individualization of learning.
2. A more fluid arrangement of children for group learning experiences (multi-age grouping).
3. The integration of once isolated disciplines.
4. A movement away from Carnegie units toward authentic learning.
5. A movement away from discipline-driven environments and toward social modeling.
6. A shift toward more powerful learning strategies (p. 309).

The research by Maurer and Davidson (1998) indicated a need for the development of a technological curriculum fashioned specifically for middle school age students. Basic skill preparation needed to be part of the curriculum with higher order thinking skills making up an even larger part. The targeted seventh and eighth grade students were in need of training for computer technology skills that would transfer utilization into other classes and into the student's daily lives.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

The availability, knowledge, and usage of technology were documented at the beginning of the research project through surveys and pretests. Results indicated that, though overwhelmingly available, little or no usage of technology was indicated outside the computer lab. Additionally, students were not using technology for personal use with the exception of browsing the Internet and using e-mail.

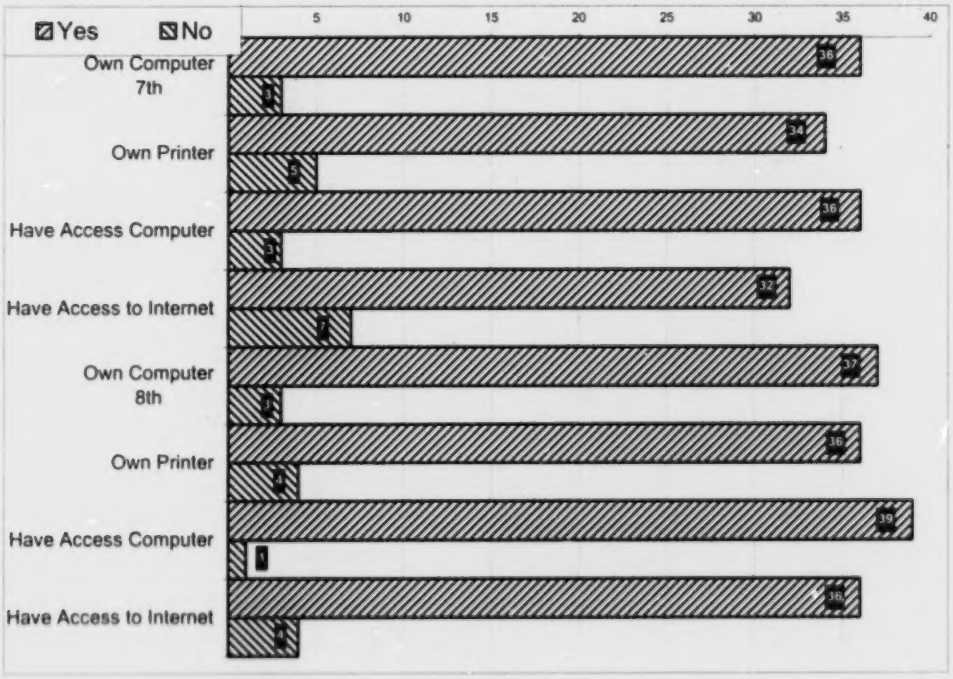

Figure 1. Student Access to Technology Survey

First, a survey was given to the students to determine what technology was available at home. The results of the first four questions were tabulated and graphed (Figure 1). The Student Technology Access survey (see Appendix A) indicated a high rate of available technology for the targeted seventh and eighth grade students to use outside the computer lab.

Table 1

Seventh Grade Pretest Scores

Student ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Ave Score	Overall Ave Score
Quiz Set 1	65	83	66	62	90	89	74	83	67	80	74	76	100	60	69	78	57	57	82	78		75	67
Quiz Set 2	43	60	55	53	85	80	65	93	50	85	50	72	88	72	63	48	68	70	57	83	80	68	
Quiz Set 3	68	68	53	42	75	83	55	58	43	68	53	65	83	40	45	43	55	50	43	60	72	58	

Table 2

Eighth Grade Pretest Scores

Student ID	1	2	3	4	5	6	7	8	9	10	11	12	13	Ave Score	Overall Ave Score
Quiz Set 1	76	71	78	62	70	52	83	64	59	69	72	74	70	69	72
Quiz Set 2	81	66	85	81	74	72	85	71	64	93	76	73	76	77	
Quiz Set 3	73	53	77	65	80	75	80	68	68	68	65	73	57	69	

Online quizzes were given before lessons on software applications to assess entry-level knowledge. The results were then tabulated (see Tables 1 and 2). The average seventh grade scores for Quizzes 1, 2, and 3 were 75%, 68%, and 58%, which gave an overall average of 67%. Seventy percent was the lowest passing grade at this school. The eighth graders scored slightly higher on a different set of quizzes. Scores for Quizzes 1, 2,

and 3 were 69%, 77%, and 69% which averaged to 72% overall. Students had some knowledge of technology, but were in need of instruction in order to be able to use technology outside the computer lab.

Table 3

Seventh Grade Beginning Scores for Touch Typing, March, 2001

ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	AVE.
AWPM	14	9	9	13	21	16	25	14	12	32	22	11	32	19	32	8	21	17	14	15	33	**18**

Table 4

Eighth Grade Beginning Scores for Touch Typing, March, 2001

Student ID	1	2	3	4	5	6	7	8	9	10	11	12	13	AVE.
AWPM	44	25	12	47	22	22	31	19	11	20	34	45	31	**28**

The seventh grade touch typing AWPM (actual words per minute with errors subtracted) scores were documented during the first week and then graphed (see Table 3 for seventh grade and Table 4 for eighth grade). Only four seventh graders and three eighth graders were typing at or above the AWPM required by the district high school for incoming freshmen. The class average for the seventh grade was only 18 AWPM, which was 12 AWPM less than the required 30 AWPM needed by the end of seventh grade. The average for the eighth grade was 28 AWPM, which was 7 AWPM less than the required 35 AWPM required by the end of the eighth grade year. Touch typing was used in every software program used on the computers in the school, so daily practice on touch typing skills was needed to prepare students for the job of creating documents easily and quickly both in computer class and outside computer class.

Probable Causes

The problems concerning lack of transfer of technological skills experienced in the school could have come from the fact that the school was small and rural. Lack of funding, economic decline, insufficient teaching materials, scheduling inflexibility, and lack of digital expertise were possible contributing factors.

Funding was considered by Dewees (1999) to have frequently been tied to enrollment. Dewees also noted that rural districts seemed to have lower property value assessments, which might have limited the funding for erecting and/or maintaining school buildings. Lack of funding could have influenced the maintenance of electrical needs for computers and Internet connections as well as purchasing of software and of needed computers.

Rural communities have experienced an ongoing loss of family owned farms as well as manufacturing jobs causing community members to move elsewhere for employment, according to Howley-Baker (1997). Throughout the twentieth century, the out migration of rural communities has caused economic decline to small communities (Howley-Baker). One negative aspect found was that rural communities have a more limited view of the existing job market for hometown youth. Rural teenagers and young adults consequently limit expectations towards achieving higher education goals or potential employment possibilities (Edington-Koehler, 1987). The negative attitudes may have begun at or even before middle school age.

Insufficient teaching materials may have contributed towards the problem. Nationally, school reform had proceeded very slowly and instruction was poor (Howley-Barker). Bennett (1999) pointed out that resistance to change could have been a factor.

Burnette (1999) clearly argued that classroom diversity provided teachers additional challenges to provide appropriate instruction for all students of all ability levels and cultures. The lack of hands-on teaching materials available to teachers for teaching technology could have been a factory in the problem.

Specific middle school issues could have been a cause for the problem. Team teaching required time to collaborate. Common class times would have been needed. Smaller schools often shared facilities and teachers with a high school, which contributed to little flexibility for scheduling (Wiles,1995). Because small rural schools relied on the high schools for specialization and depth, the high school priorities often disrupted middle school scheduling.

Families may have needed assistance with technological tools such as the Internet. Ngeow (1999) reported that "the most accurate predictor of a child's achievement in school is the extent to which the child's family is able to (i) create an environment that encourages learning; (ii) communicates high, yet reasonable expectations for their children's achievement and future careers; and (iii) become involved in their children's education at school and within the community" (para. 1). A concise location, or listing, of educational material on the Internet may have been needed for the community's families. According to Trotter (1998) digital resources were plentiful, but few people knew how to use them effectively.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Solutions for the possible causes of the problems identified in chapter two were implemented during the 2001 school year. The isolation of a small rural community and the limitations of the middle school age students who lived there needed to be addressed. Monke (1998) indicated that there were no simple answers for implementing computer technology into a school system.

The Dewees (1999) study indicated that appropriate technology accessible by the community could foster closer community interaction. Better communication and decision-making to which computer use might have contributed would have enhanced the rural district by adding needed information. Howley-Barker (1997) reported that computers and the infrastructure could have sustained isolated rural communities in much the same way books have done in the past two centuries. A strong teacher/administration/community partnership and school-community agreement pertaining to educational programs, Edington (1987) observed, achieved the best educational results. Edington named the benefits of smaller communities to be: higher levels of community support, creating stronger feelings of belonging and a better-developed self-concept for children. Thus, implementing a community enhanced, adult-centered technology-based program might have been one way to approach possible problems of isolation experienced in small rural communities.

Given that students need family and community support for a better self-concept, another possible solution might have been constructing an accessible Internet site listing education resources for families to use at home. Ngeow (1999) found that increasing parental participation in schools improved student achievement. Ngeow noted that parents, while on the Internet with their children, increased involvement in home learning activities including academic instruction.

Lemke (1998) reported five circumstances under which technology has a positive impact.

1. Students learned faster and with more depth of understanding of basic skills.
2. Students were engaged in learning.
3. Technology exposed students to the latest field practices.
4. Students would become better prepared for the workplace.
5. Because learning is student-centered, teaching is strengthened.
6. Students learned how to find information, ask questions, assess sources, hypothesize and communicate effectively.

According to Wenglinsky (1998) the use of technology at the middle school level resulted in higher levels of achievement than the use of technology at the elementary level. Eighth graders used computers for higher-order thinking skills while doing homework. Wenglinsky stressed allowing interaction between students in class as well as on the Internet through telecommunications.

Wiles (1995) indicated technology would have helped small rural communities overcome isolation. Developing appropriate learning skills at the middle school level, Wiels said, was more important than mastering them.

A universal design of instructional material might have engaged students actively in learning (Orkwis, 1999). Peer tutoring and reciprocal-role tutoring (Burnette, 1999) also had a boosting effect on students. Students with wide differences in abilities perceived learning to be relevant and transferable. Ngeow (1998) and Sivin-Kachala (2000) referred to technology as a grab bag of choices from which to choose.

Lack of teaching materials and training was a possible issue. Teachers who were technologically trained felt better prepared to use computers for instruction (Fatemi 1999). Trained teachers, Fatemi said, also spent more time trying out software and looking for Internet sites online. Cuban (2000) warned of how quickly technology changed. The Internet might have been a reliably current and up-to-date tool.

Sufficient technology, according to Rockman (2000), when used appropriately, made impressive and significant changes in the way students learn. An interview with Becker (1998) found research showed a 5% to 10% increase in math skills over several months due to computer usage. Trotter (1998) reported children's language skills sometimes improved, as well. With respect to higher-order thinking, the Department of Education from the University of Maryland Baltimore County (1996) discussed computer-supported seminars as a substitute for face-to-face seminars. Edward Jenkinson (1992) discussed a personal experience communicating with a group of summer school elementary students. Students wrote more and better at all levels of instruction when computers were used and an interested audience was present.

Project Objectives and Processes

The following project objectives, processes, and action plan were developed in the fall of 2000.

Objective I

As a result of planning and implementing a curriculum of technology during the period from February through the end of the school year 2001, the seventh and eighth grade students from the targeted school will demonstrate improved skills by means of touch typing practice, word processing, spreadsheet, slide show presentations, web page design, and Internet research.

Processes to be used to implement the objective include the following:

1. Ample time to practice touch-typing.
2. Group projects allowing for differences in students' multiple intelligences.
3. Online research done in cooperative groups.
4. Printed documents and digitally saved presentations, online quizzes, and self-evaluation surveys to reflect student improvement.
5. Opportunities to correct printed work for a final assessment.
6. Portfolio demonstrating student growth

Objective II

As a result of involving students actively in meaningful projects utilizing technology, the seventh and eighth grade students from the targeted school will demonstrate transfer of the skills into every day life.

Processes to be used to implement the objective include the following:

1. Practice touch-typing daily using word processing and publishing programs.

2. Design digital images, spreadsheets and slide show presentations similar to assignments given in other subjects and extracurricular activities in which students are presently participating.
3. Utilize the Internet to research real-life problems to solve.
4. Require reflective feedback from students, i.e. reflection papers.

Project Action Plan

The action plan was designed to increase usage of technological skills of the targeted seventh and eighth grade students. The two main objectives of the plan were to improve students' technological skills and to increase students' use of technology in every day life.

I. Project Preparations (prior to implementation)
   A. Prepare a calendar for the remainder of the year
      1. Pretests
      2. Lessons and group projects
      3. Group presentations, PMI's, and Posttests
   B. Administer surveys
      1. Student surveys
         a. Pre-lesson
         b. Post lesson
      2. Student and teacher surveys

II. Project delivery
   A. Pretest students prior to each unit
   B. Administer each unit, assigning projects

C. Assessment of students

1. Assign reflection papers
2. Posttest students
3. Evaluate portfolio artifacts

D. Re-evaluate the plan to maintain objectives

III. Conclusion of action plan

A. Summarize the intervention with students

1. Reflection papers
2. Observations

B. Organize data

C. Graph data

D. Share results with students

Methods of Assessment

The following interventions were used for teaching, modeling, and assessing technology instruction: (1) unit plans which included a syllabus, state goals, accommodations for multiple intelligences, and performance-based assessments, (2), online quizzes (3), student portfolios (4) reflection papers, and (5) touch typing scores. The interventions included all aspects of student performance and growth as well as transfer into students' daily lives. Pretests were administered at the beginning of each unit. Posttests were administered at the end of the units. Changes in grades earned between pretests and posttests were evaluated after each unit. Performance assessments were based on rubrics given to each student prior to the project. Growth in touch-typing skills was also evaluated.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

On the first day of class, the action research project was explained to the students. Students wrote a practice reflection paper using the PMI format (Appendix N). A creative cover for a three-ring binder portfolio was created and printed. Students were given letters of consent to participate in the action research project to take home for parents or guardians to sign and return.

Touch typing at 35 actual words per minute was a goal for all graduating eighth graders. The goal for touch typing seventh graders was 30 actual words per minute. Therefore, the first 20 minutes of every class period was dedicated to practicing touch typing. Because students had only 20 minutes in which to do other work, more days were needed for unit project completion.

On the second day, students took the first pretest of the action research project online. Students logged onto www.funbrain.com where quizzes were ready to be taken. Students were given copies of the syllabus and unit one plan. Then the first unit of instruction (Appendixes B though I) was then explained by the teacher. The unit included research, a presentation, a descriptive essay about the event, a slide show presentation for eighth graders only, and an SAT reflection paper (Appendix O). Since the action research project began several weeks before the April spring break, the topic for the project was to choose a vacation location for the upcoming spring break. Students were to research the

cost, activities, transportation, lodging, and sightseeing possibilities for the vacation. Groups were formed alphabetically making four groups total. Each group began by choosing a vacation location. The next step was to decide the format to use for presenting information. The choices were: skit, brochure, poster, or budget. Each format was assessed with different performance task rubrics (Appendixes F through I).

The next 5 weeks were used for the first unit. One week was needed to research information on the Internet. Another week was needed to put the information into the correct format to be presented. The skit group wrote a skit and practiced before being videotaped. The poster group copied pictures from the Internet that were pasted into a word processing program and then printed on a black and white printer. The pictures were then colored with markers. Captions for the pictures were created in a word processing program. The brochure group copied pictures from the Internet, which were pasted into a publishing program. Members then created text for the brochure and printed the final product on a black and white printer. The pictures were colored with markers. The budget group also researched facts and data on the Internet. The data was entered into a spreadsheet where formulas were used to calculate totals. Clipart was used to enhance the final product, which was printed on a black and white printer and colored with markers.

Some students did the Internet research and typing assignments outside the computer lab. One seventh grader spent several hours downloading information from the Internet at home. That student then compiled a brochure, printed it and brought it to school for approval. Four eighth grade students typed a skit at a sleepover one member hosted. A few members of the seventh grade skit group hand-wrote the skit, then each member typed a copy of it during class.

As the first part of unit one was finished, students began work on writing the essay part of the assignment. After printing out a first draft of the essay, the author then stapled together the essay, a Peer Conference on Written Work (Appendix S), and a rubric. Two other students proofread the essay. Proofreaders made suggestions for improvement, spelling, grammar, sentence structure, clarity of thought, and then signed at the end of the essay. The author of the essay made corrections to the essay, when in agreement with the proofreader, by correcting the copy saved on the computer. A second draft was printed. The second draft was stapled on top of the first and handed in to the computer teacher for a computer grade. The essay was graded and once more returned to the author who was then allowed a final chance to improve the essay and print out the final copy. The final copy was turned in to the language arts teacher for a grade in language arts. Students layered the paperwork of the essay with the rubric being the bottom paper. The essay assignment alone spanned 5 days for completion.

Because the more experienced eighth graders completed the research and essay faster than the seventh graders, the eighth graders were given an additional assignment of creating a slide show, which paralleled the essay. Due to the additional eighth grade assignment, the two different age levels finished unit one at the same time.

The final event in the first unit plan was a reflection paper. Students wrote an SAT (Appendix O) explaining the project and how knowledge learned could be used in the real world. Many comments were made concerning use of learned skills for other school assignments (Appendixes V and W). Artifacts were selected for student portfolios.

The students took an online posttest for growth comparison immediately after the first unit. Results were compared graphically with the initial scores for that test. The next day, the second pretest was given online.

The second unit (Appendixes J – M) involved integration of the art class with the action research class in the computer lab. The art teacher and computer teacher were involved in team-teaching digital imaging.

The digital imaging unit required students to alter a digital self-image using a graphics program along with a slide show program. The art teacher and computer teacher evaluated the final products using different specialized rubrics, one for art and another one for computer class (Appendix M). Printed color images of students' work were displayed in the school hallway for several weeks prior to completion.

After the weeklong combined classroom unit, computer students formed groups to research and create a slide show concerning the different uses for digital imaging in today's world. Students then wrote a Mrs. Potter's Questions reflection paper (Appendix Q) for the unit. Artifacts were selected for student portfolios. The final parts of the unit were juggled around the ISAT testing and Easter Break, which took place the following two weeks.

Students took an online posttest for growth comparison after completion of the second unit. The results were graphed to reflect the change in scores. The next day, the third pretest was taken online.

Two spreadsheet assignments were given to the seventh and eighth graders. The purpose was to practice entering data and graphing data. The teacher coached the first assignment heavily, while the second assignment was open to students to find the most appropriate solutions. Seventh graders' first spreadsheet was making a grade book. The

second spreadsheet was graphing the age, in months, and height, in centimeters, of all students in seventh grade computer class. Eighth graders' first spreadsheet was graphing the age, in days, and number of siblings of all students in eighth grade computer class. The second spreadsheet was to graph the receiving statistics of an NFL team. Each student was assigned a different team to research. The statistics were found on the Internet. A 3-2-1-reflection paper (Appendix P) was written after the spreadsheet unit.

With 3 weeks left of school, the seventh and eighth graders began to work on separate programs. The seventh graders created a slide show called 'All About Me'. Each seventh grader practiced inserting clipart and text onto slides. Animation of the clipart and text as well as transition of the slides was used. Music was also added to enhance the slide show. The eighth graders created a web page. The web page needed to include clipart, text, tables, background music, and working hyperlinks. The content of the web pages and hyperlinks was to demonstrate past student made computer documents as well as describe hobbies and other interests the students had. The slide shows and the web pages were displayed on the Internet at the school district web site. The seventh and eighth grade spent two weeks completing this unit.

Both classes spent 2 days evaluating other school's web sites on the Internet using an intranet web quest (Appendix T). Then both classes wrote a final reflection paper called a Wrap Around (Appendix R). The final posttest online was taken and graphed. Artifacts were gathered for student portfolios.

As an exercise in 'Mail Merge', the seventh and eighth graders created a Technology Use Survey (Appendix U), which was to poll all students in the kindergarten through eighth grades. Each survey printed had the name of the person being surveyed at

the top as part of the mail merge lesson. The computer students then hand-delivered the surveys to the other students in the school who were then polled. The intent of this assignment was for seventh grade students to do the gathering and graphing while the eighth graders practiced graduation. However, scheduling conflicts arose. The teacher finished the final stages of the survey.

Six months after the action research project was completed the seventh grade students, who were then eighth graders, were given a survey to document and evaluate actual transfer occurrences (Appendix X).

Presentation and Analysis of Results

In order to validate potential and actual transfer, an increase in skill and knowledge needed to be documented. Revealed in Tables 5 and 6 and Figures 2 and 3 were significant increases in test scores, which indicated an increase in knowledge. Figure 4 illustrated the touch typing progress of each student throughout the action research. Documentation of transfer was accomplished through reflection papers and a survey.

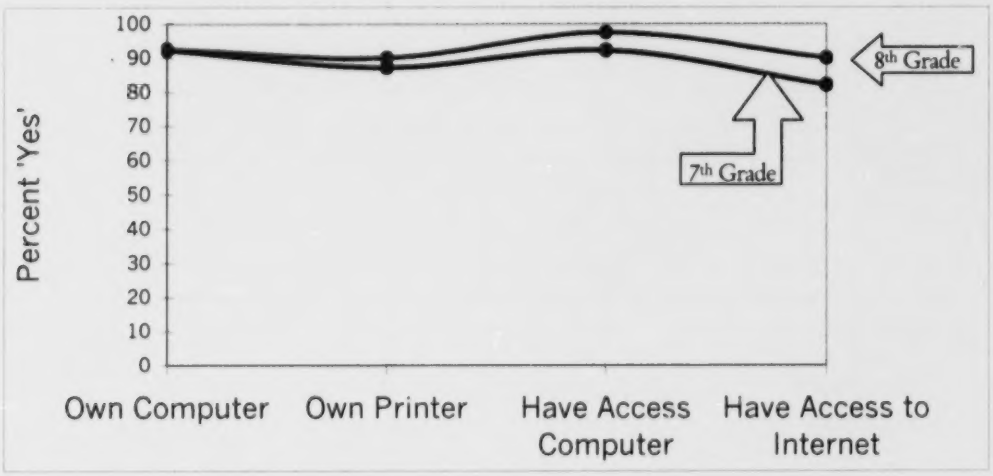

Figure 2. Technology access for seventh and eighth grades was very high.

Table 5

Seventh Grade Pretest and Post Test Results

	ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Class Ave.	
Quiz Set 1	Pretest	65	83	66	62	90	89	74	83	67	80	74	76	100	60	69	78	57	57	82	78		75	Pretest
	Posttest	99	98	92	96	100	100	100	100	97	100	93	96	100	90	96	100	88	75	100	100		96	Posttest
	% Increase	52	18	39	55	11	12	35	20	45	25	26	26	0	50	39	28	54	32	22	28		31%	% Increase
Quiz Set 2	Pretest	43	60	55	53	85	80	65	93	50	85	50	72	88	72	63	48	68	70	57	83	80	68	Pretest
	Posttest	90	93	100	85	95	100	85	100	85	100	72	93	93	100	93	73	90	100	82	100	100	92	Posttest
	% Increase	109	55	82	60	12	25	31	8	70	18	44	29	6	39	48	52	32	43	44	20	25	41%	% Increase
Quiz Set 3	Pretest	68	68	53	42	75	83	55	58	43	68	53	65	83	40	45	43	55	50	43	60	72	58	Pretest
	Posttest	93	98	98	55	95	98	93	98	80	100	93	100	100	98	100	98	80	95	75	100	100	93	Posttest
	% Increase	37	44	85	31	27	18	69	69	86	47	75	54	20	145	122	128	45	90	74	67	39	65%	% Increase

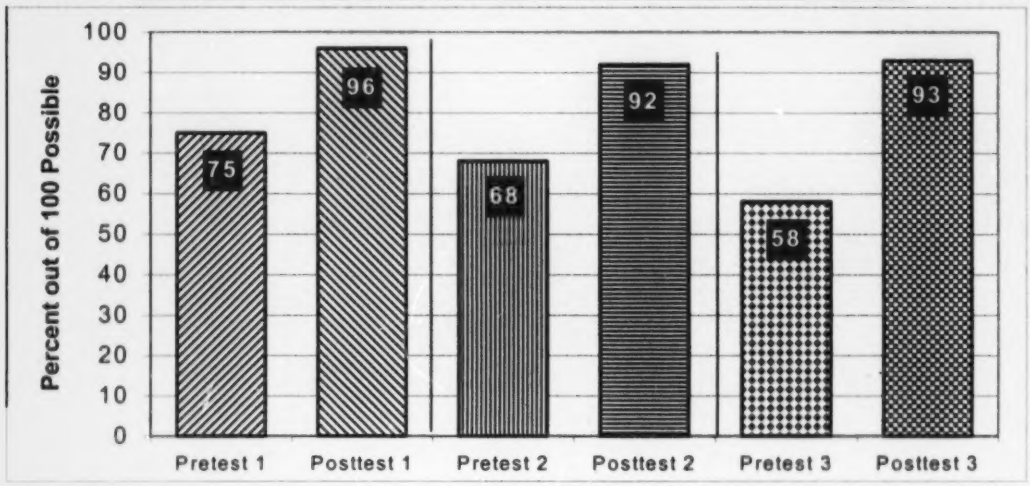

Figure 3. Seventh grade test results, pretest and posttest, dramatically demonstrated a growth in student knowledge during the action research project.

Students in both seventh and eighth grades demonstrated significant improvement between the pretests and the posttests. Seventh grade realized an overall increase of 46% in test scores (Table 5, Figure 3 for seventh grade).

Table 6

Eighth Grade Pretest and Post Test Results

Quiz	ID	1	2	3	4	5	6	7	8	9	10	11	12	13	Class Ave.	
Quiz Set 1	Pretest	76	71	78	62	70	52	83	64	59	69	72	74	70	69	Pretest
	Posttest	100	96	96	90	95	95	100	84	75	100	94	100	100	94	Posttest
	% Increase	32	35	23	45	36	83	20	31	27	45	31	35	43	37%	% Increase
Quiz Set 2	Pretest	81	66	85	81	74	72	85	71	64	93	76	73	76	77	Pretest
	Posttest	100	100	100	100	100	100	100	100	81	100	100	100	100	99	Posttest
	% Increase	23	52	18	23	35	39	18	41	27	8	32	37	32	29%	% Increase
Quiz Set 3	Pretest	73	53	77	65	80	75	80	68	68	68	65	73	57	69	Pretest
	Posttest	100	100	100	100	93	98	100	100	85	100	100	98	95	98	Posttest
	% Increase	37	89	30	54	16	31	25	47	25	47	54	34	67	43%	% Increase

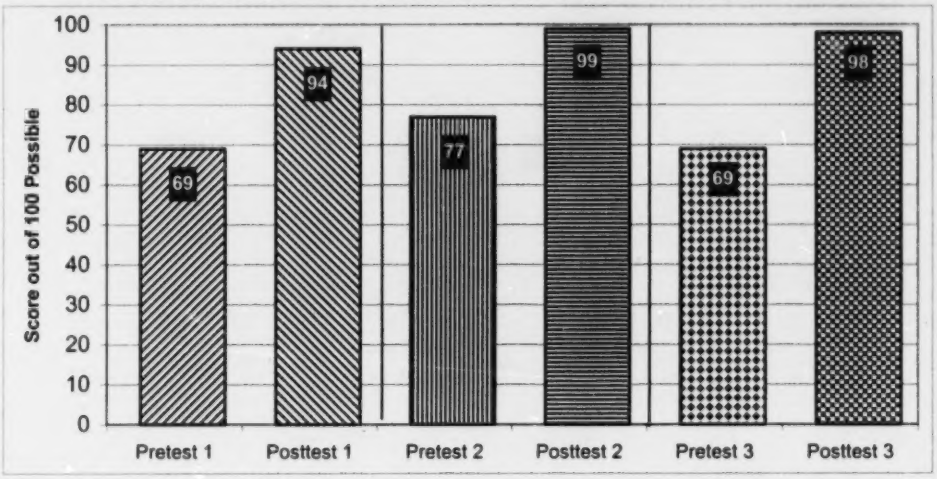

Figure 4. Eighth test results, pretest and posttest, indicated a significant increase in knowledge gained during the action research project.

Eighth grade made a 36% gain in test scores (Table 6, Figure 4 for eighth grade). The quizzes for seventh and eighth grade were not the same but rather were appropriate for both age levels tested. Subject matter of the quizzes was relevant to the material taught during the exploratory class.

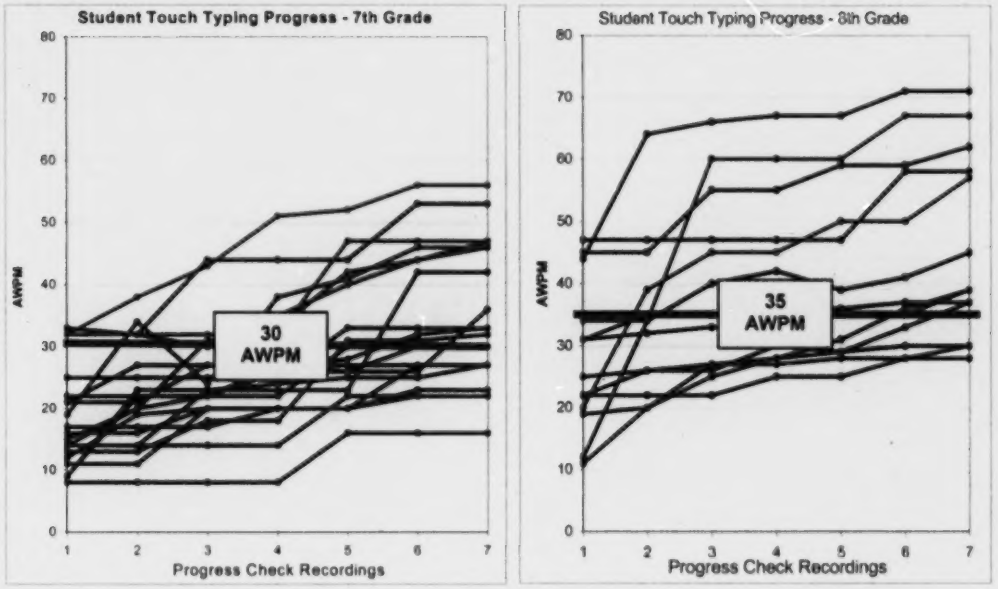

Figure 5. Student touch typing progress for seventh and eighth grades graphed as a steady uphill improvement during the action research project.

Touch typing improved dramatically during the twelve-week exploratory class, especially for the seventh graders (Figure 5 above). The routine was to practice for 20-minute sessions every day. Many of the eighth graders had already learned to touch type well the previous year during exploratory class. However, notice the low scores at the start of class, then the sudden uphill surge many students experienced. The students who graphed as sudden uphill surges only needed a refresher to return to scores from the previous year. The students who progressed more slowly were still learning for the first time or had not yet achieved high scores yet.

Touch typing skills were an essential part of every software program seventh and eighth graders used in the lab. Having the freedom to type without looking at the keyboard increased document production dramatically for students.

Table 7

School Wide Technology Survey by Students in Action Research Project

		Word	Excel	PPP	Pblshr	Paint	Bus	Tutor	Internet	Other
7th Grade	What do you use the most?	6							19	1
	What are you best at?	7		1		3			13	2
	What helps you as a student or teacher the most?	10	4						10	2
	If you had all of these at home, which would you use most at home?	2		2		2			18	2
	Which programs would you like to learn more about?		8	1	5	1		3	5	2
		Word	Excel	PPP	Pblshr	Paint	Bus	Tutor	Internet	Other
8th Grade	What do you use the most?	6				1			5	
	What are you best at?	3	1			1			6	
	What helps you as a student or teacher the most?	7							5	
	If you had all of these at home, which would you use most at home?	4				1			7	
	Which programs would you like to learn more about?	2	3			1			2	2
		Word	Excel	PPP	Pblshr	Paint	Bus	Tutor	Internet	Other

As an assignment in mail merge, both classes typed a survey (Appendix U), merged data bases of students' names into the surveys, printed the surveys, and polled students in kindergarten through eighth grade. The question topics were to assess which software programs students used most as well as why students used the chosen programs. See Table 7 for a breakdown of the responses from the seventh and eighth graders.

The survey began with five multiple choice questions. Choices included Microsoft Office programs used in computer class, Word, Excel, PowerPoint, and Publisher. Also included were Windows graphics, Paint, two pre-kindergarten CD's (put in for the kindergarten, first and second grade students), Internet, and other.

The Internet was a favorite for both seventh and eighth grades. Microsoft Word was also a popular program indicating student use while communicating.

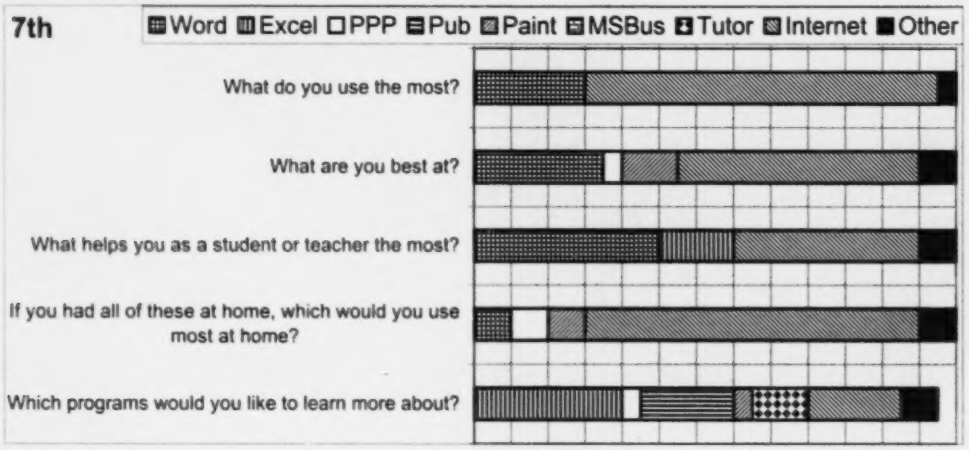

Figure 6. Seventh grade responses indicated a high usage of the Internet with Microsoft Word a close second choice.

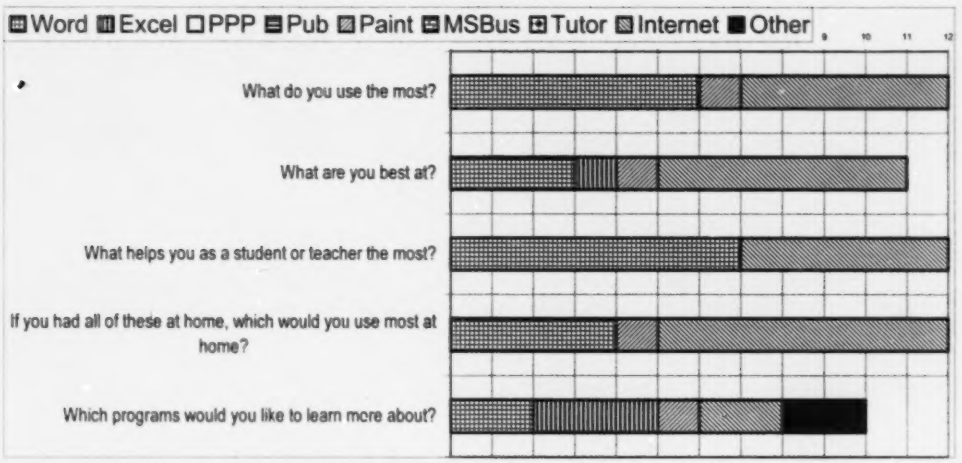

Figure 7. Eighth grade also showed a strong usage of Internet and Microsoft Word. An interesting development from both groups was the response, which indicated a desire to learn more about Microsoft Excel, a spreadsheet program.

The last three questions required comments. The comments were graphed using common factors.

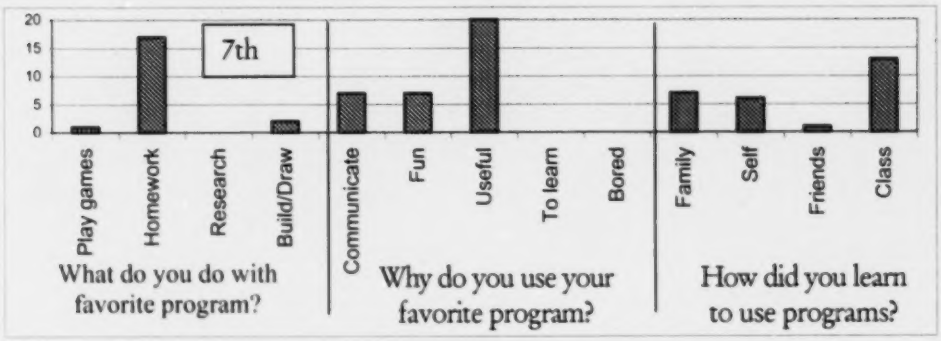

Figure 8. Seventh grade results showed a preference towards using technology for homework. This group found technology to be more useful than fun.

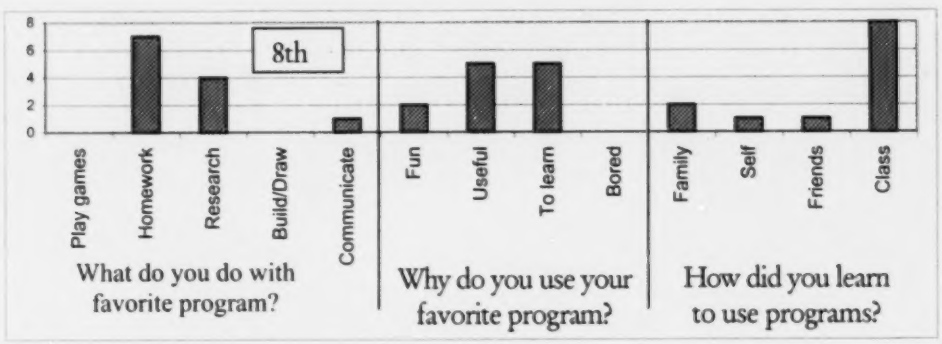

Figure 9. Eighth grade results indicated a desire to learn from technology.

After the responses were categorized, a graph was made (Figures 8 and 9). Both grade levels were using technology for homework in daily life significantly more than for entertainment. There were differences between seventh and eighth grade responses to the *why* question. Both grades found the programs to be *useful*, but eight grade students said the programs were used *to learn* information. Eighth grade students might have perceived

software programs and the Internet as an option to improve skills and increase knowledge rather than just to complete homework and to use for entertainment. The graph results seem to indicate that as for personal use, seventh graders seemed to use technology for educational goals, while eighth graders seemed to manage technology with educational maturity.

One other important indication from this survey was the high occurrence of learning technology while in the computer class. Teaching methods used in computer class apparently work well for the majority of both seventh and eighth graders.

Seventh and eighth grade students wrote reflection papers after each unit during the action research project. The comments were compiled and grouped according to the content of the comments (see Appendix V and Appendix W for the actual comments).

Table 8

Documented Incidence of Potential Transfer

	8th Percent Incidence	7th Percent Incidence
Level 1: Using skill exactly as taught	108%	52%
Level 2: Using skill with some changes	200%	133%
Level 3: Using skill as prerequisite for more complex skill	31%	14%

The comments made by the students were broken into three obvious categories (Table 8). Level one was using a skill again exactly the way it was learned. An example would be touch-typing or learning to create a bar graph, then making another bar graph using different data. Level two included altering a learned skill to fit a different situation. For example, a student learned how to create a bar graph, and then used a circle graph on another assignment, or a student learned how to research a vacation in class, and then went

on to help parents research a family vacation. The highest level was level three. Level three involved the use of a learned skill as a prerequisite for a more complex task. One student commented that learning to create a brochure would be useful later on to promote a business. Another student saw value in learning how to work in a group noting that this skill would help later on when working with coworkers on the job. Level three requires thought evolution to a higher level of abstraction.

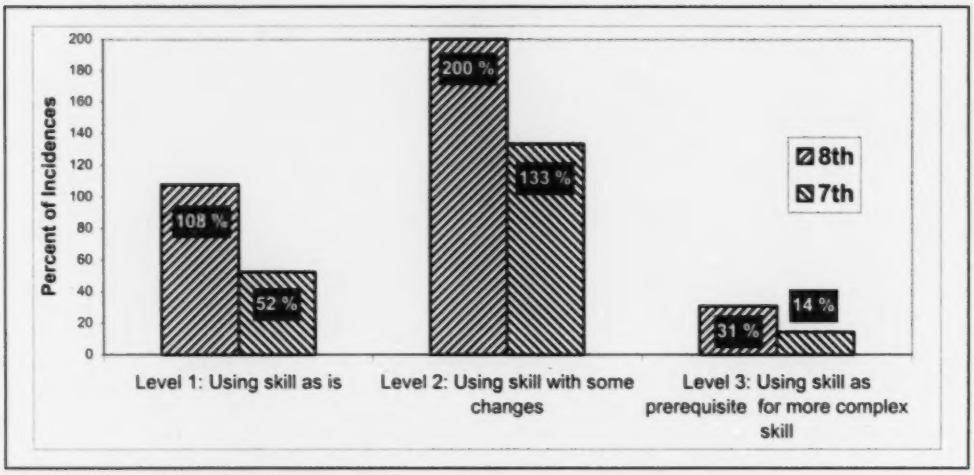

Figure 10. Documented Potential Transfer

A bell curve seemed to appear when the three levels of data were graphed (Figure 10). Out of 21 seventh graders, there were 11 level one responses or 52% occurrence, 28 level two responses or 133% occurrence, and 3 level three responses or 14% occurrence. The eighth grade, however, with 13 members, gave 14 level one responses or 108% occurrence, 26 level two responses or 200% occurrence, and 4 level three responses or 31% occurrence. Again, the eighth grade exceeded the seventh grade higher-thinking responses, by more than double. Perhaps the older students think differently due to the extra year of maturity.

Table 9

Table 9

Documented Actual Transfer

7th Grade	*Level 1*			*Level 2*			*Level 3*		
	Often	Sometimes	Not Yet	Often	Sometimes	Not Yet	Often	Sometimes	Not Yet
Internet Research	7	3		2	2		2		
Word	5	2		3	1		3		
Excel	3	2	6		1		1		
PowerPoint	1	2	7	1					
Publisher	1	3	7		1		1		
Digital Imaging	1	1	8		1				
Other: Copy/paste							1		
Other: Mavis					1				
8th Grade	*Level 1*			*Level 2*			*Level 3*		
	Often	Sometimes	Not Yet	Often	Sometimes	Not Yet	Often	Sometimes	Not Yet
Internet Research	3	5		1	2		2	1	
Word	4	5			4		1	1	
Excel		4			1			1	
PowerPoint		4	6						
Publisher		3	7						
Digital Imaging		3	7						

After 6 months, students were again surveyed (Appendix X). The results (Table 9) indicated a significant usage of the learned technology. Although much of the technology taught during the action research project had not been tried yet, a significant usage of learned skills and knowledge had occurred (Figure 11). A variety of Levels were also documented (Figure 12).

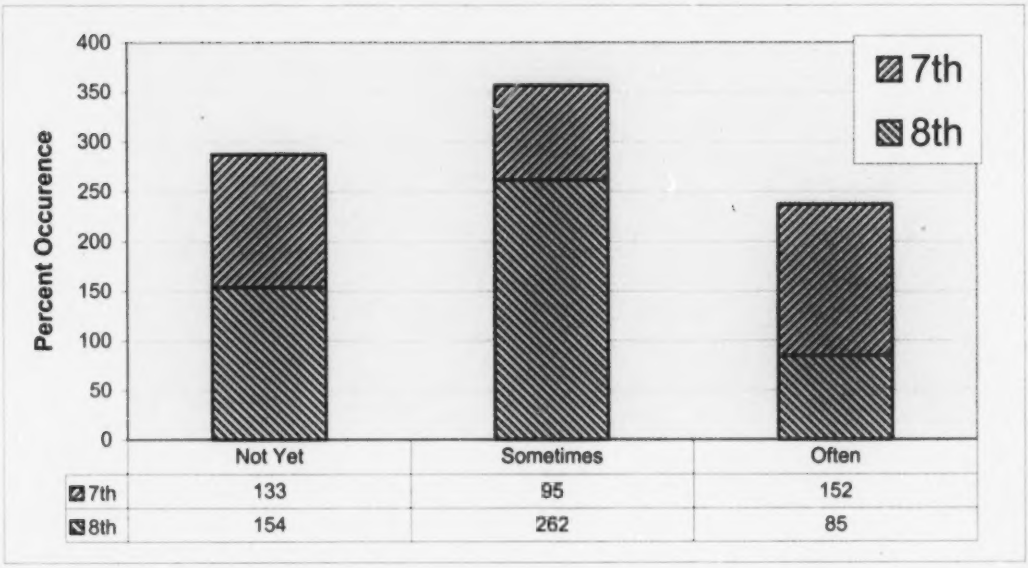

Figure 11. Graph of Actual Transfer Incidences

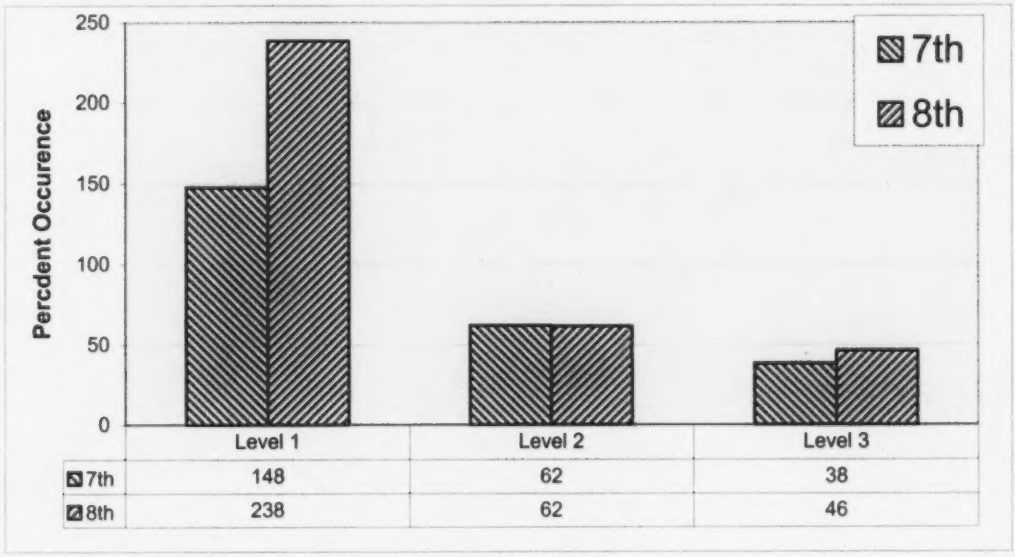

Figure 12. Graph of Different Levels of Actual Transfer

Seventh grade students transferred learned technological material at a significant rate 6 months after the action research ended, however, eighth grade outperformed seventh. More Level 1 transfer was present than Level 2, which was slightly more than Level 3 at

both seventh grade and eighth grade. However, more students indicated use of technology *often* more than *sometimes*. A significant number of *not yet* responses occurred. Student comments were documented (Appendixes Y and Z).

Conclusions and Recommendations

Consciously teaching students to apply learned material to other aspects of life was the theme of this action research project. Students needed to first learn the material, then find a way to use that material while still in the computer classroom as an exercise for future use outside the computer classroom. One difficulty in measuring transfer was the time factor. Often transfer of learned material is not immediately demonstrated, making a 12 week action research project too short to document the majority of evidence. Documenting students' conscious plans to use new skills elsewhere was the next best option. Six months later a final survey documented actual transfer.

Growth of learned skills and knowledge was indicated in all areas assessed including touch typing, knowledge of technology and software applications. Without growth in at least one of these areas, a connection of the classroom activities and transfer of technological use to outside the classroom would not be credible. There was sufficient growth in knowledge and skill to assure transfer was possible.

Potential, as well as actual, transfer was measured using comments made on reflection papers indicated student thoughts were focused on using learned information outside the computer lab. The use of learned material has always been a concern in the teaching field. Learning occurred not as a static experience, but as a flowing, evolving, personal experience. The purpose of this action research paper was to find, then document the occurrences of transfer of learned skills or knowledge beyond the classroom in which it

was first learned. Documented evidence of students' transfer of learned skills and material outside the computer lab was abundant.

Student usage of technology, learned during the action research project, did continue beyond the computer classroom. Because this project produced significant documentation of transfer, an important issue became apparent. Students may have needed to be aware that what was learned would be relevant to future experience. Learning might become a more valuable tool to a student who has experienced this type of conscious transfer. Students who are aware of the tools of transfer might feel empowered by the choices available (direction, focus, time input) due to having experienced conscious transfer.

This action research project was focused on a small part of the human life span-seventh and eighth graders or thirteen and fourteen-year-olds. As Wenglinsky (1998) said, technology is more useful when taught to middle school age, due to higher levels of abstract thinking skills, than fourth graders. However, this study invites further research involving high school students, college students, as well as adults. If eighth graders more than double the level three type responses, what can we expect from high school students? What can we expect from adults?

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APPENDIX

Appendix A

Computer Survey
2000-2001

The Technology Committee is interested in the number of students that have access to a computer outside of the school day. This information will help us plan for our future use of technology.

Directions: Please circle your answer

What is your grade level: K 1 2 3 4 5 6 7 8

1. Do you own a computer?	Yes	No
2. Do you own a printer?	Yes	No
3. Do you have access to a computer?	Yes	No
4. Do you have access to the Internet?	Yes	No
5. Do you have an E-mail address?	Yes	No
6. Do you have a scanner?	Yes	No
7. Do you have a CDRW (burner)?	Yes	No
8. Do you have a digital camera?	Yes	No
9. Do you have a Web television?	Yes	No
10. Would you use a school open lab if it were provided for a couple of hours one or two nights a week?	Yes	No

Appendix B

7th Grade Syllabus
Unit One - Group Project & Essay

Project 1: Group project

Students will form three or four groups. Each group will choose a location to use for a dream vacation. Then each group will decide which format to present the research information: skit, brochure, poster, and budget.

Assessment will come from a rubric attached to this packet.

Project 2: Essay

Students will use data processing to create a five-paragraph essay about what they will do during the upcoming spring break.

Rough draft due date is Wednesday, March 7, 2001. It will be proofread and signed by two fellow classmates who will check for spelling, grammar, punctuation, etc. Final copy is due Friday, March 9, 2001.

Check list for evaluation is included in this packet.

Created by Ruth Drake on 2/25/01

Appendix C

8th Grade Syllabus
Unit One – Group Project, Essay & Slideshow

Project 1: Group project

Students will form three or four groups. Each group will choose a location to use for a dream vacation. Then each group will decide which format to present the research information: skit, brochure, poster, and budget.

Assessment will come from a rubric attached to this packet.

Project 2: Essay

Students will use data processing to create a five-paragraph essay about what they will do during the upcoming spring break.

Rough draft due date is Wednesday, March 7, 2001. It will be proofread and signed by two fellow classmates who will check for spelling, grammar, punctuation, etc. Final copy is due Friday, March 9, 2001.

Check list for evaluation is included in this packet.

Project 3: Slideshow

Students will use the information from the essay to create a slideshow. The slideshow will have at least three slides.

Due date for the slideshow is Friday, March 27, 2001.

Check list for evaluation is included in this packet.

Created by Ruth Drake on 2/25/01

Appendix D

Unit One - Goals, Standards, Benchmarks

Goal: 3 - Write to communicate for a variety of purposes.

Standard: C - Communicate ideas in writing to accomplish a variety of purposes.

Grade Level:	**Benchmark:**
Middle School	3.C.3b - Using available technology, produce compositions and multimedia works for specified audiences.

Unit Plan Using Multiple Intelligences Grid

Unit: Plans for Spring Break

Grade Level: Middle School

Subject Area: Computer Technology/Language Arts

TimeLine: 3-4 weeks

Multiple Intelligences experienced/assessed:

1. Whole-class learning experiences:	Write a 5 paragraph essay	Create a 5+ slide slideshow. Include graphics and sound.	One of four group projects. See performance tasks.	Keep a portfolio of selected artifacts
2. Whole-class assessments for learning experiences:	Check List	Performance	Rubric	Rubric
3. Culminating event for unit:	Display essay and slideshow on web page portfolio, which students will create during class as another unit later in this exploratory class.			

Created by Ruth Drake on 2/25/01

Appendix E

Performance Tasks

Subject Area: Computer Technology, Language Arts **Grade Level:** 8th Grade

Task Description: As part of a middleschool career project, students will develop a vacation plan for spring break. The project will include (1.) Research on affordable vacations, (2.) A poster about dream vacations, (3.) A brochure about a dream vacation, or (4.) Expenses involved in a dream vacation

Direct Instruction for Whole Class: The whole class will be involved in the following learning experiences:

1. Discussion of possible locations available for vacations, lists, prices, etc.
2. Training on use of Microsoft Publisher 98 graphics program
3. Internet sites showing potential vacation spots, costs and what is available to do there.

Group Work: Students may select one project from the following groups:

Group One	Group Two	Group Three	Group Four
Research facts and statistics about dream vacations	Make a poster summarizing the highlights of a dream vacation	Prepare a brochure with facts, statistics and pictures about a dream vacation	Create a budget which lists the expenses of a dream vacation

Individual Work: In addition to the group project, each student will complete the following individual assignments:

1. A five paragraph essay describing what will occur during the coming spring break This essay will also be graded by the language arts teacher and included for a grade for language arts. The student will be required to have the essay proofread by two other students in the class. Corrections will be done. All copies of this assignment will be stapled together to show growth.
2. A five slide (or more) slideshow following the paragraphs from the essay. Text and graphics will be included in the slideshow. Transition and animation as well as sound and background color will be expected.
3. Selected items will be included in a three ring portfolio. The portfolio will also contain selected items from the next units as well.
4. Selected items will be hyperlinked on a student created web page to be done later in this exploratory class session.

Methods of Assessment:

1. Teacher made online tests
2. Rubrics to assess each of the group projects
3. Check lists to assess the criteria for the essay, slideshow, and portfolio

Created by Ruth Drake on 2/25/01

Appendix F

PERFORMANCE TASK ASSESSMENT

DESIGN A VACATION BROCHURE

Standards

1. State Goal 3: Write to communicate for a variety of purposes.
2. State Goal 5: Use the language arts to acquire, assess and communicate information.

Benchmarks

3. 3.C.3.b – Using available technology, produce compositions and multimedia works for specified audiences.
4. 3.B.3.b – Edit and revise for word choice, organization, consistent point of view and transitions among paragraphs using contemporary technology and formats suitable for submission and/or publication.
5. 5.C.3a - Plan, compose, edit and revise documents that synthesize new meaning gleaned from multiple sources.

Vacation Brochure

You are planning to take a vacation for the five days we have during Spring Break. You task is to design an attractive and informative brochure to attract vacationers to your chosen attraction/location. You must include the following:

- Cost of the trip (travel, lodging, meals, attractions, souvenirs, etc.)
- Major attractions
- Testimonials from visitors
- An attractive cover

Rubric to Assess Brochure

Criteria	0	1	2	3	Points Earned
Cost	None	1 item	2 Items	3+ items	
Attractions	None	1 attraction – poor description	2-3 attractions – adequate descriptions	3+ attractions – vivid descriptions	
Testimonials	None	1 quote – boring	2 quotes – attention-getting	3 quotes - motivating	
Cover	None	2 colors, No graphics	2 colors, Graphics	3+ colors, Graphics	

Grading Scale

11-12	A
10	B
9	C
8	D

_____ _____

Your Name Your Grade

Created by Ruth Drake on 3/10/01

Appendix G

PERFORMANCE TASK ASSESSMENT

DESIGN A VACATION BUDGET

Standards

1. State Goal 3: Write to communicate for a variety of purposes.
2. State Goal 5: Use the language arts to acquire, assess and communicate information.
3. State Goal 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.
4. State Goal 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty-using concepts of probability.

Benchmarks

1. 3.C.3b – Using available technology, produce compositions and multimedia works for specified audiences.
2. 5.C.3a - Plan, compose, edit and revise documents that synthesize new meaning gleaned from multiple sources.
3. 8.B.3 – Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.
4. 10.A.3.a – Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.

Vacation Budget

You are planning to take a vacation for the five days we have during Spring Break. You task is to develop a budget for your vacation to your chosen attraction/location. You must include the following:

- Cost of the trip (travel, lodging, meals, attractions, souvenirs, etc.)
- Major attractions
- Graphic representation of this information
- Clipart and/or pictures from or about the vacation spot

Rubric to Assess Brochure

Criteria	0	1	2	3	Points Earned
Cost	None	1 item	2 Items	3+ items	
Attractions	None	1 attraction – poor description	2-3 attractions – adequate descriptions	3+ attractions – vivid descriptions	
Graph	None	1 color – inaccurate, boring	2 colors – accurate, attention-getting	3 colors – right-on, motivating	
Clipart	None	1, no color	2 with colors	3+ colors	

Grading Scale

11-12	A
10	B
9	C
8	D

_____ _____

Your Name Your Grade

Created by Ruth Drake on 3/10/01

Appendix H

PERFORMANCE TASK ASSESSMENT

DESIGN A VACATION POSTER

Standards

1. State Goal 3: Write to communicate for a variety of purposes.
2. State Goal 5: Use the language arts to acquire, assess and communicate information.

Benchmarks

1. 3.C.3b – Using available technology, produce compositions and multimedia works for specified audiences.
2. 5.C.3a - Plan, compose, edit and revise documents that synthesize new meaning gleaned from multiple sources.

Vacation Poster

You are planning to take a vacation for the five days we have during Spring Break. You task is to design an attractive and informative poster to depict your chosen attraction/location. You must include the following:

- Cost of the trip (travel, lodging, meals, attractions, souvenirs, etc.)
- Major attractions
- Pictures
- Typed descriptions/captions/titles for each of the above

Rubric to Assess Brochure

Criteria	0	1	2	3	Points Earned
Cost	None	1 item	2 Items	3+ items	
Attractions	None	1 attraction	2-3 attractions	3+ attractions	
Pictures	None	2 pictures – no colors	2 pictures – colored	3+ pictures – colored	
Descriptions	None	1-2, boring, some typed	2-3, adequate, typed	3+ typed, vivid descriptions	

Grading Scale

11-12	A
10	B
9	C
8	D

_____ _____

Your Name Your Grade

Created by Ruth Drake on 3/10/01

Appendix I

PERFORMANCE TASK ASSESSMENT

CREATE A SKIT FOR A VACATION

Standards

1. State Goal 3: Listen and speak effectively in a variety of situations.
2. State Goal 5: Use the language arts to acquire, assess and communicate information.

Benchmarks

6. 3.B.3a – Deliver planned oral presentations, using language and vocabulary appropriate to the purpose, message and audience; provide details and supporting information that clarify main ideas; and use visual aids and contemporary technology as support.
7. 5.C.3b – Prepare and orally present original work (e.g., poems, monologues, reports, plays, and stories) supported by research.

Vacation Skit

You are planning to take a vacation for the five days we have during Spring Break. You task is to create a skit, which depicts scenes of a vacation to a designated location. You must include the following:

- Cost of the trip (travel, lodging, meals, attractions, souvenirs, etc.)
- Major attractions
- Visual/audio Aids
- Typed skit with planned narrative

Rubric to Assess Brochure

Criteria	0	1	2	3	Points Earned
Cost	None	1 item	2 Items	3+ items	
Attractions	None	1 attraction – poor description	2-3 attractions – adequate descriptions	3+ attractions – vivid descriptions	
Visual/audio Aids	None	1, boring	2, colorfully and/or musically appropriate	3+ Colorfully and musically effective	
Typed narrative	None	Includes part of narrative	Includes all lines, poorly typed	Complete edition, well typed	

Grading Scale

11-12	A
10	B
9	C
8	D

_____ Your Name _____ Your Grade

Created by Ruth Drake on 3/10/01

Appendix J

7th and 8th Grade Syllabus
Unit Two – Graphic Imagery

Project 1: Graphic Digital Imagery

Students will create from a digital picture taken last week a digitally altered image using a graphic design program available to them in the computer lab.

Assessment will be in the form of a student made rubric and/or a teacher made checklist.

Project 2: Group project

Students will form three or four groups. Each group will choose a meaningful task related to the digital imagery unit. Choices are: poster of key steps to altering a digital image, making a rubric for self-evaluation of the finished digital image, 3 minute slideshow to present to an art studio, research ways altered digital images are used today.

Assessment will come from a rubric attached to this packet.

Project 3: Self-evaluation

Students will evaluate their finished digital image using a student made rubric

Rubric for this evaluation will be done as a group project for one of the four groups named above in Project 2.

Project 4: Reflection paper using 3 - 2 - 1.

Students will use the format of 3-2-1 questions for reflection.

Project 5: Portfolio

Students will choose artifacts from this unit for their portfolio.

Created by Ruth Drake on 3/25/01

Appendix K

Unit 2 - Goals, Standards, Benchmarks

Goal: 26 - Through creating and performing, understand how works of art are produced.

Standard: B - Apply skills and knowledge necessary to create and perform in one or more of the arts.

Grade Level:	**Benchmark:**
Middle School	26.A.3e Visual Arts: Demonstrate knowledge and skills to create 2- and 3-dimensional works and time arts that are realistic, abstract, functional and decorative.

Unit Plan Using Multiple Intelligences Grid

Unit: Graphic Alterations to Own Facial Image

Grade Level: 7th and 8th

Subject Area: Computer Technology/Graphic Arts

TimeLine: 1 week

Multiple Intelligences experienced/assessed:

1. Whole-class learning experiences:	Create altered image using digital picture of self	Self evaluation of image	Write on reflections using 3 - 2 - 1	Keep a portfolio of selected artifacts
⇕				
2. Whole-class assessments for learning experiences:	Observation	Rubric	Checklist	Rubric
3. Culminating event for unit:	Display in school hallway or on web page portfolio, which students will create during class as another unit later in this exploratory class.			

Created by Ruth Drake on 3/25/01

Appendix L

Unit 2 - Performance Tasks

Subject Area: Computer Technology, Graphic Arts **Grade Level:** 7th and 8th Grade

Task Description:	Each student alter their own digital image using a graphics program. The group projects will include (1.) poster on key stepsin altering an image, (2.) Making a rubric to evaluate image, (3.) 3-minute slideshow for art studio, or (4.) Research - how used today

Direct Instruction for Whole Class:	The whole class will be involved in the following learning experiences: 1. Examples of altered digital imagary 2. Training on use of graphics program; paint, powerpoint, MSpublisher98 3. Demonstration on changing facial features using graphics program

Group Work: Students may select one project from the following groups:

Group One	**Group Two**	**Group Three**	**Group Four**
Poster showing the key steps to alter an image using graphic software	Rubric assessing the digital images we will have created	Prepare a 3 minute or more slideshow to present to an art studio	Research how this type of art is used in our world today.

Individual Work:	In addition to the group project, each student will complete the following individual assignments: 1. Create their own digitally altered image representing a self-portrait 2. Self-assess own work. 3. Selected items will be included in a three ring portfolio. The portfolio will also contain selected items from the next units as well. 4. Selected items will be hyperlinked on a student created web page to be done later in this exploratory class session.

Methods of Assessment:	1. Student made rubric to assess individual work 2. Teacher made rubric to assess projects and portfolio 3. Check lists to assess the criteria for the student made rubric

Created by Ruth Drake on 3/25/01

Appendix M

Unit 2 - Assessment

Criteria	1 **Made no Changes**	2 **A few minor Changes**	3 **A few major Changes**	4 **Really cool! Worth a Million $**	
Use of Text	None	Meaningful Coherent	Meaningful Coherent Matches changes made to image	Really describes what is happening with respect to the digital image	____
Use of Clipart and Other Inserts	None	One or two minor inserts	Inserts enhance digital image	Inserts match text and enhance the digital image	____
Texture and/ or shades of gray	Two used	Three or more of Texture or of Shades of gray	Both texture and shades of gray used	Texture and shades of gray used throughout image	____

Student Name _____ **Total:** ____ (12 points)

Grading Scale:		
	11, 12	**A**
	10	**B**
	9	**C**
	8	**D**

Created by Ruth Drake on 3/25/01

Appendix N

PMI Template

Name
7ex

2/19/01

PLUS

Write what you liked about this lesson.

MINUS

Talk about what you didn't like.

INTERESTING

What kept your attention?

Created by Ruth Drake on 2/19/01

Appendix O

SAT Template

Name
7ex

3/22/01

SUMMARY

Type your summary here.

ANALYSIS

Give an analysis of something here.

TRANSFER

How would you use this somewhere else?

Created by Ruth Drake on 3/22/01

Appendix P

3 - 2 - 1 - Reflection Page

Directions: Type your answers in the box below. Be sure you include the correct amount of responses for each box!

Teacher: Class: *7th Grade Computer Exploratory* Date:

Your name:

List ***three*** things you have learned about using the spreadsheet programs.

3
1
2
3

List ***two*** things you would like to try on your next spreadsheet project.

2
1
2

List ***one*** comment you have about spreadsheets.

1
1

Created by Ruth Drake on 4/25/01

Appendix Q

Mrs. Potter's Questions

Directions: Click just after the words below each question. Start typing your own response to the question. Fill in your name and the date first.

Teacher: Class: *7th Grade Computer Exploratory* Date:

Your name:

1. ***What were you expected to do?***

   I was supposed to

2. ***In this assignment, what did you do well?***

   The best part of my assignment was

3. ***If you had to do this task over, what would you do differently?***

   If I had to redo this assignment over I would be sure to

4. ***What help do you need from me?***

   I really need help with

Created by Ruth Drake on 3/22/01

Appendix R

Wrap - Around

Directions: Type your answers below. Put in the date and your name first.

Teacher: Class: *7th Grade Computer Exploratory* Date:

Your name:

One idea I learned today is ...

The fact that really surprised me is ...

One thing I'll remember 25 years from now is ...

One idea I would like to learn more about is ...

Created by Ruth Drake on 3/22/01

Appendix S

Peer Conference on Written Work

Directions: Students exchange written work with a partner and critique the work using the following form.

☐ First Reading ☐ Second Reading ☐ Third Reading

Please read or listen to my written work and help me by answering the following questions:

Title of Piece: _____

The part I like best is...
because...

The part I am not really clear about is...
because...

Please tell me more about...

You might want to try...

Written by:_____ Read by:_____

Created by Ruth Drake on 3/21/01

Appendix T

Middle School Web Sites
5/15/01

1. Aledo Junior High
2. Belleville - Our Lady Queen of Peace School
3. Broadmoor Junior High School
4. Byron Middle School
5. Charleston Middle School
6. Churchill Junior High School
7. Decatur - St. James School
8. Effingham - St. Anthony Grade & High School
9. Fairview Heights - Illinois Center for Autism
10. Hillsboro Jr. High School
11. Jackson County - Brehm Preparatory School
12. Johns Hill Magnet School
13. Mercer County - Sherrard Junior/Senior High School
14. Porta Junior High School
15. Rochester Junior High School
16. Rockford - Christian Life Schools
17. Washington Intermediate School

Site Questions

Your Name:
Your Class:
Your Age
Name of School and its http address of site:
1. Does the index page explain what is available at this site well?
2. Do the hyperlinks all work?
3. Are all teachers at this school represented?
4. Are students represented?
5. What is the focus of this site?
6. Is this site easy to use? Why or why not?

Created by Ruth Drake on 2/15/01

Appendix U

Survey: Transfer

Interview:
John Doe

If you have more than one choice, use a 1, 2, and 3, etc.

	Microsoft Word	Microsoft Excel	Microsoft PowerPoint	Microsoft Publisher	Graphics (Paint)	Magic School Bus CD's	Tutor Series (red, orange, blue, green CD's)	Internet	Other
1 What do you use the most?									
2 What are you best at?									
3 What helps you as a student or teacher the most?									
4 If you had all of these at home, which would you use most at home?									
5 Which programs would you like to learn more about?									

6 What do you do with you favorite program listed here?

_____
_____
_____

7 Why do you use your favorite programs listed here?

_____
_____
_____

8 How did you learn to use the programs listed here?

_____
_____
_____

Appendix V

Seventh Grade Student Comments from Reflection Papers

7th	
Level 1 - Using skill as is	
"I will remember how to do a PowerPoint because they are neat and will use them often." – 5	1
"How to make different types of slide shows for different subjects." – 3	1
"I will know how to do a slide show from now on by myself." – 2	1
"That if a site is copied and pasted in word, if you double click, it will take you to the site." – 6	1
"Is how to add pictures to a PowerPoint." – 20	1
I would like to try…"Sports" – 17	1
"I learned to go (on vacation) as a group and help other out and to plan it out like a week ahead. I think we could make a little more effort on are brochure but above all I think it went well group wise." – 4	1
"I learned about Mapquest. It helped us figure out how many miles it would be." – 8	1
"I learned how to use publisher, it si very helpful because it shows all the borders. I like it better than Word because it's got many different varieties of things for your necessities. I also learned how to use Mapquest. If I ever did take a vacation I might use the Embassy Suites web site. It is helpful because it asked for you address and plans your drive for you. Also you may book reservations." – 6	1
"Now if I want to plan a trip I would have a better idea how to find the information." – 17	1
"You will have to work good in a group. I can find good information on the Internet." – 16	1
Level 1 Total	11
Level 2 - Using skill with some changes	
"The music (PowerPoint) because it didn't work on my computer but it sounds cool." – 21	1
"A graph of how popular some sports are." – 13	1
"How much grades improve." – 13	1
"I would like to try to be more organized." – 7	1
"I would like to try different formulas that do different things." – 6	1
"I would like to make a survey for something" – 15	1
"I would like to make a schedule for the week." – 15	1
"Track times" – 17	1
"To make a full grade book." – 21	1
"How you would make a circle graph." – 20	1
"Get turned in on time." – 16	1
"be here every day." – 16	1
"They are easier to do if you aren't sitting by friends." - 6	1
"I could use this operation at home for planning or help planning a vacation for my family. I could use the Internet a lot more for vacations since we learned about it at Computers." - 10	1
"The skills I learned by doing this project was on map quest, I learned how to calculate the distance between the to places your going. I will use this on family vacations or trips in the future." - 5	1

"I would like to use them (spreadsheets) on my science project in 8th grade." - 5	1
"I would like to try to graph homework on the spreadsheet." - 5	1
"I could use what I have learned for a future reference. The next vacation I go on I now where to look at on the Internet." - 5	1
"I can also use those skills (brochure and research) in Mrs. O's class if we have a project or report to do. I would use the Internet to get information on my project that I'm supposed. I can use Microsoft Word to type my report to type some useful information that I need for my report." – 3	1
"I learn a lot from this project (vacation). I learn more about Maui, how to find prices on traveling, and how to find hotels on the Internet. I will be able to use these things if I ever go traveling somewhere." - 12	1
"I think this will help me in my life later on because I never really took information off the Internet that had to do with traveling. It could also help me because my family wants to go on a short not too expensive trip in the summer and maybe with all the information I have we could go to the Ozarks." – 15	1
"I found out how to use Mapquest. I know I will use this again. I learned it isn't easy to plan a vacation. I also found out lots of hotels are expensive." – 13	1
"Now that I use Mapquest I go there every time I need to look at a map." - 7	1
"Once I started using Mapquest I go there every time I need to see a map of a place. This was a very good idea to use Mapquest; it has a map of almost everything that you're looking for. I love it! – 2	1
"If we really had to go on the trip, I would really use those web sites. I might just go to the web site www.gas.com." - 18	1
"I will be using the Internet at home to look for stuff to see when we go to Maine and stuff to do as we stop at some of the towns on the way. The ideas for our projects are some that my family may be doing." – 21	1
"I would be able to use this information that you gave us for future vacations that I need to find information on." – 20	1
"We found out that we could really make this fun by going with each other and not fighting about the whole situation. It was very peaceful and warm up there (Hawaii). I learned that you really can make the best out of something that you think could really stink. Also I realized that you don't just sit around and watch the sunset all day, there are a lot more interesting stuff to do and I was lucky enough to get to do some of that stuff." – 14	1
Level 2 Total	28
Level 3 - Using skill as prerequisite for more complex skill	
"Mail Merging, I would like to learn more is because it could be useful when I am older I could do it if I run a business." – 5	1
If I had to redo this assignment over I would be sure to…"make myself look like a model or someone famous because that is my goal in life." – 14	1
"How you would make report cards." – 20	1
Level 3 Total	3

Appendix W

Eighth Grade Student Comments from Reflection Papers

8th	
Level 1 - Using skill as is	
"I will remember twenty-five years from now is how to use Excel." – 7	1
"How to make a web page." – 2	1
"Word" – 3	1
"I will probably remember how to use is Word. That really isn't that hard to use, and I will keep typing in it. I will also remember how to make a web page. I had a lot of fun doing it and you don't have a be a genius to figure it out." – 1	1
"How to use Excel and how to make PowerPoint." – 5	1
"How to make a web page." – 4	1
"how to make PowerPoint on the computer." – 10	1
"How to use Word and the Internet." – 13	1
"Using the mail merge." – 3	1
"I would like to use more data." – 5	1
"make a graph on different types of other statistics." – 10	1
"put the names of famous sports people and there stats by it." – 8	1
"use the Internet to graph more things." – 13	1
"Next time I would like to make my graphs with a little more detail and larger." – 6	1
Level 1 Total	14
Level 2 - Using skill with some changes	
"…how to make the computer do all of my adding, subtracting, counting, averaging, etc. for me." – 7	1
"making more advanced web pages." – 2	1
"I would like to learn more about mail merging. I think that is a very good idea and that it is very useful." – 1	1
"How to make better web pages." – 5	1
"How to put more things on a web page like pictures, etc." – 4	1
"I would like to learn more a bout making web pages." – 13	1
"I would like to learn more about web pages." – 11	1
"Take more time." – 9	1
"put more time into it." – 12	1
"take more time to make my picture better." – 10	1
"get it done on time." – 8	1
"I would make the picture not of me and not have it black and white." – 13	1
"do my best to evenly spread out the work." – 6	1
"make my picture more creative and maybe spend a little more time on it." – 11	1
"One thing that I would like to try on Excel is use this information not only in just computers, but also in other classes." – 2	1

"Learn more formulas" – 3	1
"I would like to make different kinds of graphs." – 1	1
"I would also like to use a lot more statistics from different things." – 1	1
"I would like to use a different type of graph." – 5	1
"make different kinds of graphs." – 10	1
"graph something that you couldn't use a bar graph for." – 13	1
"I would like to try to learn to do more things in excel on my next project." – 11	1
"It is a good way to make graphs for school project." – 5	1
"I learned from this project how to look up information on the Internet for a vacation. I can actually go and take a trip to the fun place we looked up (Jamaica)." – 3	1
"You will use these skills out side of class in many different ways. Like if you are at home and if you need t o hurry up and type something we practiced Mavis Beacon (touch-typing). If you need to use the Internet we were taught how to search for things on the Internet." – 8	1
"From creating our poster in my group I was able to get some ideas of how to decorate my board for the science fair. I was able to make my science fair board easier with the skills that I had from my group project. I could use this in any of my classes if I ever have something I need to put together such as a poster." – 11	1
Level 2 Total	26
Level 3 - Using skill as prerequisite for more complex skill	
"I believe that the skills I have learned in this class, particularly the group work, will help me in the future. The group work will help me work with classmates and coworkers, as I get older. The essay and slide show skills I have learned will help me in future class assignments and work presentations. The slide show presentation and brochure will be especially useful if I get into business later in life." – 7	1
"Later on in my life I would probably use this technique in an acting career. Maybe I would use it later on in school to get up in front of an audience." – 2	1
"The budget will help all of us use a budget in our lives so we all get good jobs." – 9	1
"The skill that I have learned is how to make brochure. I might use it to make it for a business or to promote my own business." – 5	1
Level 3 Total	4

Appendix X

Final Survey
Action Research Project
Teaching for Transfer

To: My Action Research Students of the spring of 2001! Your Name: _____

From: Ms Drake, Fieldcrest East Your e-mail address (optional):_____

I have just one more request to make of you before I turn in my final copy of the thesis next week. What I need to know is ***how, where, why, and how often*** have you used what you learned last spring during computer exploratory. Feel free to type or write a paragraph or two about what you have done so far.

It was fun watching everyone dive into the vacation plans, spreadsheet assignments, Internet research, digital imaging, PowerPoint, and for last year's eighth graders, web pages. Remember that mail merge survey we did at the end of last year? You printed out a copy for each person in the whole building then hand delivered them to him or her. All of that is in the thesis.

So far I have 64 pages in that thesis! I have quoted all of you in it using what you said in those reflection papers. Now I need more quotes, so…

Answer with***: Often, sometimes, or Not Yet***

	Level 1– I am using what I learned exactly the way I learned it	Level 2 – I have made a few changes to make what I learned fit what I need (Explain on the back if you can, I'll quote you)	Level 3 – I am using what I learned in a new, very different way (explain on the back if you can – I'll quote you)
Internet Research			
Word			
Excel			
PowerPoint			
Publisher			
Digital Imaging			
Other:			
Other:			

Write on the back if you need more room!

Thanks,

Ruth Drake

Created by Ruth Drake on 11/14/01

Appendix Y

Actual Transfer Quotes from Seventh Graders

Seventh Grade
"I use it for essays and assignments for teachers. I use it for fun of Internet things." - 9
"…I have used my computers abilities in…typing, cutting/pasting, using clip art, making presentations and logging onto the Internet…I can type a lot faster and I have better accuracy. Also I have used cutting and pasting when I am doing a report for some of my teachers or just playing around with faces that we have downloaded off the Internet. Before I came to her class I didn't know how to use the Internet an she really helped me to figure it out an I use those skills every time I have a chance to get on the computer." - 14
"My cousin has a web page and she has a picture of herself and I copied and pasted and changed her outfit and hair style all different ways. Also this year I used Microsoft Excel for an Algebra project. We had to make tables and graphs." - 20
"I…took a picture of our art teacher and put him in an outfit. I found it very funny (so did he). I also use the Internet research we did to go to the web sites I just sometimes not knowing it I'll criticize the web page. I also used the excel information to do a project in algebra this year. I made different graphs and changed the colors and fonts on titles." - 21
"Once, I played a joke on my brother by copying a picture of his off the Internet. Then I 'borrowed' some details from a vampire and other pictures off the net and added them to his in paint. I left this present on his desktop by simply saving it on desktop, then opening it and going to file. Once I was there I scrolled down to 'set as wallpaper' (tiled). I also used Microsoft Excel this year for one of my main algebra projects. Last year I learned how to make my graphs much more detailed. This project was graded on neatness and creativity so I did well. I add many more things than I would have if I hadn't been in this class." - 6

Appendix Z

Actual Transfer Quotes from Eighth Graders

Eighth Grade
"Using (Internet research) the way I was taught. Only used it (Microsoft Word) for typing words or lessons." - 13
"We didn't really use anything yet, we just typed and learn different things styles how to type, like business letters, and parental letters. We learned how to do other certain things, not sure how to explain." - 8